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(54) Title: COMPOSITIONS FOR USE IN IDENTIFICATION OF BACTERIA

(57) Abstract: The present invention provides compositions, kits and methods for rapid identification and quantification of bacteria by molecular mass and base composition analysis.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/057717

A. CLASSIFICATION OF SUBJECT MATTER

INV. C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MEHROTRA M ET AL: "Multiplex PCR for detection of genes for Staphylococcus aureus enterotoxins, exfoliative toxins, toxic shock syndrome toxin 1, and methicillin resistance" JOURNAL OF CLINICAL MICROBIOLOGY, WASHINGTON, DC, US, vol. 38, no. 3, 1 March 2000 (2000-03-01), pages 1032-1035, XP002224611 ISSN: 0095-1137 table 1 ----- -/--	1-42

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

24 September 2008

Date of mailing of the international search report

13/01/2009

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2008/057717

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
- a. type of material
- ☒ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☒ on paper
- ☒ in electronic form
- c. time of filing/furnishing
- ☒ contained in the international application as filed
- ☒ filed together with the international application in electronic form
- ☐ furnished subsequently to this Authority for the purpose of search
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/057717

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see annex

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-42 (partially)

A kit comprising an oligonucleotide primer pair comprising a forward and reverse primer, each comprising between 13 and 35 linked nucleotides in length wherein the forward primers comprises at least 70% sequence identity with SEQ ID NO: 1465 and the reverse primer comprises at least 70% sequence identity with SEQ ID NO: 1466. Furthermore, the kit above comprising additional primer pairs for detection of *Staphylococcus aureus* and kits in which primers have been mass modified.

2. claims: 1-42 (partially)

A kit comprising an oligonucleotide primer pair comprising a forward and reverse primer, each comprising between 13 and 35 linked nucleotides in length wherein the forward primers comprises at least 70% sequence identity with SEQ ID NO: 1467 and the reverse primer comprises at least 70% sequence identity with SEQ ID NO: 1468. Furthermore, the kit above comprising additional primer pairs for detection of *Staphylococcus aureus* and kits in which primers have been mass modified.

3. claims: 1-42 (partially)

A kit comprising an oligonucleotide primer pair comprising a forward and reverse primer, each comprising between 13 and 35 linked nucleotides in length wherein the forward primers comprises at least 70% sequence identity with SEQ ID NO: 1469 and the reverse primer comprises at least 70% sequence identity with SEQ ID NO: 1470. Furthermore, the kit above comprising additional primer pairs for detection of *Staphylococcus aureus* and kits in which primers have been mass modified.

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/057717

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE Geneseq [Online] 11 January 2007 (2007-01-11), "Bacterial DNA PCR primer SEQ ID NO:874." XP002497027 retrieved from EBI accession no. GSN:AEM14131 Database accession no. AEM14131 sequence 874</p> <p>-----</p>	1-42
A	<p>KURODA M ET AL: "Whole genome sequencing of meticillin-resistant Staphylococcus aureus" LANCET THE, LANCET LIMITED. LONDON, GB, vol. 357, no. 9264, 21 April 2001 (2001-04-21), pages 1225-1240, XP004806262 ISSN: 0140-6736</p> <p>-----</p>	